



Interoperability and Meter Choice as the Foundation for Next-Generation AMI

How meter choice, open standards, and a Universal Headend system are keys to lowering AMI modernization risk and complexity

INTRODUCTION

Today, modernizing AMI is an architecture decision that sits at the core of a utility's future flexibility. As first-generation AMI systems approach end of life, rising consumer, regulatory, and grid demands are quickly outpacing infrastructure capabilities. AMI modernization now is about envisioning and designing an end-to-end architecture that can evolve.

Early AMI decisions solved for reliability and scale, with the greatest business value centered on automating meter-to-cash. At that time, "interoperability" referred more to a solution's ability to integrate into existing back-office systems while minimizing operational disruption.

Today, "interoperability" is broader and far more critical. It represents the ability to evolve AMI systems over time without being constrained by single-vendor solutions. For most utilities, starting over with a rip-and-replace is not an affordable or practical solution.

With modern interoperability now extending across the endpoint, network, headend software, and applications, many utilities today are primed for an evolution to Grid Edge Intelligence use cases while minimizing cost, risk, and disruption.

KEY PILLARS OF ITRON'S INTEROPERABILITY STRATEGY

While interoperability spans the end-to-end AMI ecosystem, grid edge meters and devices are key elements to unlock AMI flexibility. Further, the intersection between smart meters and integrations into headend systems are often the limiting factor to how easily utilities can adopt new applications and multi-vendor meter choices with minimized disruption. Itron has prioritized interoperability throughout its end-to-end solution, from endpoints to commercial packaging.

GRID EDGE APPLICATIONS

METER & DEVICE DIVERSITY

STANDARDS COMPLIANCE

UNIVERSAL HEADEND SYSTEM

OPERATIONAL FLEXIBILITY

GRID EDGE APPLICATIONS

The right AMI foundation unlocks the flexibility to deploy grid applications that deliver measurable business value from day one. With interoperable architecture, utilities can strategically deploy Distributed Intelligence (DI) applications, targeting high-impact use cases such as Grid Awareness, Fault Prevention, and Outage Awareness, to improve reliability and affordability.

By capturing value early, utilities can help justify continued investments through proven results. A supported transition from AMI 1.0 to AMI 2.0 with Itron includes hosted headend software options and incremental deployment of Gen6 endpoints with DI capabilities, enabling utilities to modernize at their own pace. This is a practical path forward that considers the move to AMI 2.0 as not a single event, but a series of value-driven steps toward a more intelligent, resilient grid.

METER & DEVICE DIVERSITY

Itron has maintained a long-standing practice of supporting multi-vendor interoperability within its AMI platforms. Over the past 15 years, Itron has built a robust and strategic third-party electric meter portfolio, integrating major North American and international meter vendors such as Aclara, Landis+Gyr, Honeywell (Elster), EDM, Secure, CHINT, Waisson and others. These integrations span multiple generations of Itron networks and technologies, supporting ANSI and IEC socket standards and DLMS/COSEM protocols for global deployments.

This portfolio demonstrates Itron's commitment to enabling utilities to mix and match meters from different suppliers while leveraging Itron's network and headend systems. This approach gives utilities, both small and large, the flexibility to select the best meters for their needs, while maintaining operational consistency and supply diversity.

Proven Scale

- » Over 40 million integrated third-party meters across global deployments
- » Partnerships with 10+ leading meter vendors and 50+ certified meter types for Itron RF Mesh networks
- » Decades of experience integrating third-party meters, ensuring interoperability and performance at scale

STANDARDS COMPLIANCE

Itron's approach to interoperability is grounded in open standards, providing a mature, proven and low-risk path to meter choice. Our solutions are designed, tested, and field-proven to support a wide range of use cases while reducing integration and operational risks.

Itron's offering is built on the DLMS/COSEM protocol—an industry-standard foundation for smart metering—and the Generic Companion Profile (GCP), which defines a structured implementation of DLMS/COSEM to ensure interoperability and compatibility across deployments.

Itron has played a leading role in promoting GCP adoption through its leadership in the DLMS Users Association (UA), and the release of the first GCP-based meter in 2025. Over the past year, Itron has worked with partners and customers around the world to advance GCP adoption. GCP is an ideal foundation for smart metering as it provides several key benefits:

- » Supports the full set of meter-to-cash functions customers need for daily operations
- » Provides flexibility to add custom features
- » Enables grid monitoring and analytics
- » Supports advanced security capabilities

Please review the following for additional insight into Itron's thought leadership within industry.

- » Itron and CHINT Global Lead Industry with First Smart Meter Based on the DLMS Generic Companion Profile (GCP) Standard
- » DLMS/COSEM in Action: Unlocking the Value of Standardized Meter-to-Cash Solutions with Renewables and Digitalization
- » Smart Metering Starts with DLMS: The Interoperable Standard
- » DLMS COSEM Explained: The Backbone of Interoperability for Modern Utilities
- » DLMS Certification: Laying the Foundation for a Smarter Grid

Meter Integration Services

Itron's Meter Integration Services are designed to streamline multi-party engagements by supporting meter partners and utility customers. The process starts with requirements assessment and compatibility validation, followed by software and hardware integration work. Itron (or a partner) develops software meter plug-ins for UtilityIQ (detailed below) and conducts hardware design and testing to ensure meters work with the network. The service includes certification and validation steps, drawing on experience with a wide range of vendors and meter types. Utilities can choose to leverage Itron's expertise or utilize Itron's documentation to work with trusted third parties to support testing and validation.

After deployment, Itron supports ongoing operations with documentation, training, and technical assistance. Throughout, the goal is to help utilities select appropriate meters, complete integration efficiently, and maintain reliable daily operations.

To learn more read our whitepaper, [Meter Integration Service: Leveraging Itron AMI Infrastructures to Integrate Partner Meters of Advance Utility Applications](#).

UNIVERSAL HEADEND

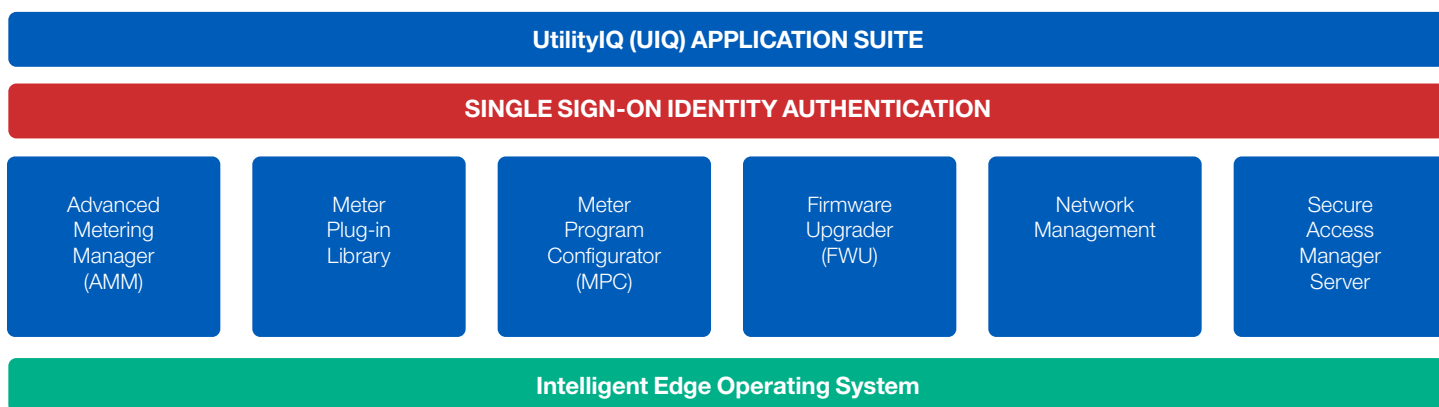
Utilities are increasingly looking to deploy a universal metering headend system to support their AMI deployments providing the following key capabilities:

- ✓ Enables multiple services (multiple smart metering commodities and distribution use cases)
- ✓ Enables a choice of device vendors within each service (and is architected to easily extend support to new devices)
- ✓ Optimized support for multiple networking options, for both powered and battery powered devices
- ✓ Provides for consistent and predictable use case execution within a given service, irrespective of the device vendors supported
- ✓ Leverages open standards to minimize cost and risk of adding new devices, but can also support proprietary protocols, where necessary

UtilityIQ offers the lowest risk path to a successful Universal Headend deployment, as it is already proven at the scale and complexity required by many utility customers. Itron has extensive experience deploying a single headend system that has natively supported a multi-vendor model with common formats and methods for integrating data into the back-office.

UtilityIQ's flexible, layered application architecture is designed for AMI and grid-edge operations. At its foundation, the architecture is open by design, enabling integration with multi-vendor devices and technologies avoiding vendor lock-in.

UtilityIQ's layered approach organizes functionality into modular components such as data collection, device management, network management, carrier management, security and analytics, allowing utilities to scale and adapt as needs evolve.



The UtilityIQ Application Suite provides a comprehensive set of tools, including Advanced Metering Manager (AMM) for meter data operations, Firmware Upgrader (FWU) for secure over-the-air updates and Meter Program Configurator (MPC) for device configuration along with a growing library of meter plug-ins.

These applications work together to support critical use cases like meter-to-cash and remote service connect/disconnect, while offering robust integration options with back-office systems such as CIS, OMS, and MDMS through industry-standard APIs and messaging interfaces. These core capabilities among many others are realized for each integrated device.

Multi-Vendor Meter Support in the Universal Headend

For more than a decade, UtilityIQ customers have had access to meters from multiple vendors via a meter plug-in framework that allows new meter support to be developed as plug-ins that work with AMM, enabling a large and ever-growing meter ecosystem. These meter plug-ins are separate software components used by UtilityIQ to integrate and manage a specific meter type or meter family, acting as a translation and compatibility layer between core UtilityIQ components and each meter. Historically, meter plug-ins have been developed by both Itron and third parties and are delivered as part of UtilityIQ patch releases but do not require a feature release upgrade.

OPERATIONAL FLEXIBILITY

The Itron solution supports electric meter options that support:

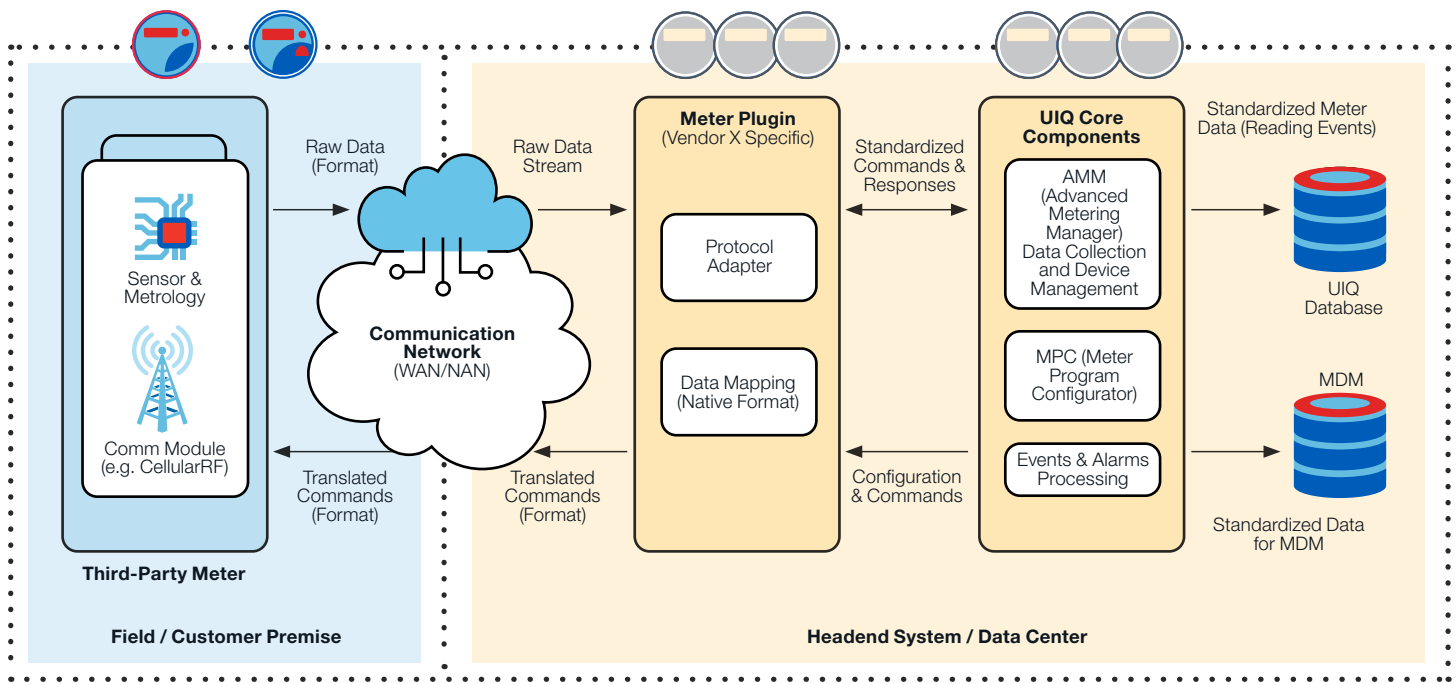
- » Meter-to-cash and Grid Edge Intelligence use cases
- » Itron and third-party meters
- » Gen6 Mesh, Cellular, and Wi-SUN networks

Utility customers can choose any combination of these electric metering options. Both cellular and/or Wi-SUN based endpoints only require a UtilityIQ software plug in integration and provide complete supply chain independence. To deploy Grid Edge Intelligence capabilities, utilities can choose DI NIC integration-based endpoints across multiple networks and both Itron and 3rd party meters.

Distributed Intelligence (DI) NIC

Itron's DI NIC is the next-generation endpoint interface designed for multi-vendor interoperability and Grid Edge Intelligence. It is fully backward compatible to support basic meter-to-cash use cases in addition to DI-enabled grid edge applications.

The DI NIC will incorporate multiple wireless networks including Gen6 mesh, Resilient Mesh and Wi-SUN FAN as well as private and public cellular. By standardizing on this platform, utilities will be able to utilize third-party meters while providing a consistent grid edge and local field access experience.



Third-Party Meter Collaboration

Customer choice and interoperability are foundational to Itron's approach. Through support for industry standards such as DLMS/COSEM and global collaboration with leading meter and technology providers, Itron enables a broad ecosystem of compatible grid edge solutions across ANSI and IEC markets.

This approach gives utilities the flexibility to select the endpoints that best fit their needs while leveraging Itron's communications, intelligence, and application platforms to deliver long-term value and innovation.

CONCLUSION

As utilities plan their path to next-generation AMI, end-to-end interoperability is foundational. The ability to support diverse meter options, open standards and seamless integrations between critical systems can effectively define a utility's service flexibility for decades to come.

Itron's history underscores a sustained commitment to interoperability and meter diversity. Through standards-based integration, proven global scale, and a modular and flexible architecture through UtilityIQ and the DI NIC, Itron empowers electric utilities to modernize at their own pace while embracing powerful edge capabilities today.

To learn more visit itron.com

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